

February 28, 2018

**ILRS Quality Control Board (QCB)
Telecon
February 28, 2018**

Next meeting: Wednesday, March 28 at 13:00 UTC, 09:00 EDT, 14:00 in UK; 15:00 in Central Europe; 22:00 in Japan.

Participants: Frank Lemoine, Horst Mueller, Carey Noll, Toshi Otsubo, Erricos Pavlis, Mike Pearlman, Matt Wilkinson, Mathis Blossfeld

This was Horst's last QCB meeting, he retires on March 9, but will keep in touch. We will miss him. Mathis Blossfeld will take his position on the Quality Control Board.

SLR Data Residuals (Horst)

Horst showed some interesting symmetrical residual pattern on spherical satellites from some stations including most of the NASA stations, Mt. Stromlo, and Wettzell; the residual pattern is shown in Figure 1 below, with range and time bias applied. The structure appears localized at 0 or 180 degrees in azimuth. Horst and Toshi will look further; the commonality of the patterns from stations to stations may indicate a modeling issue.

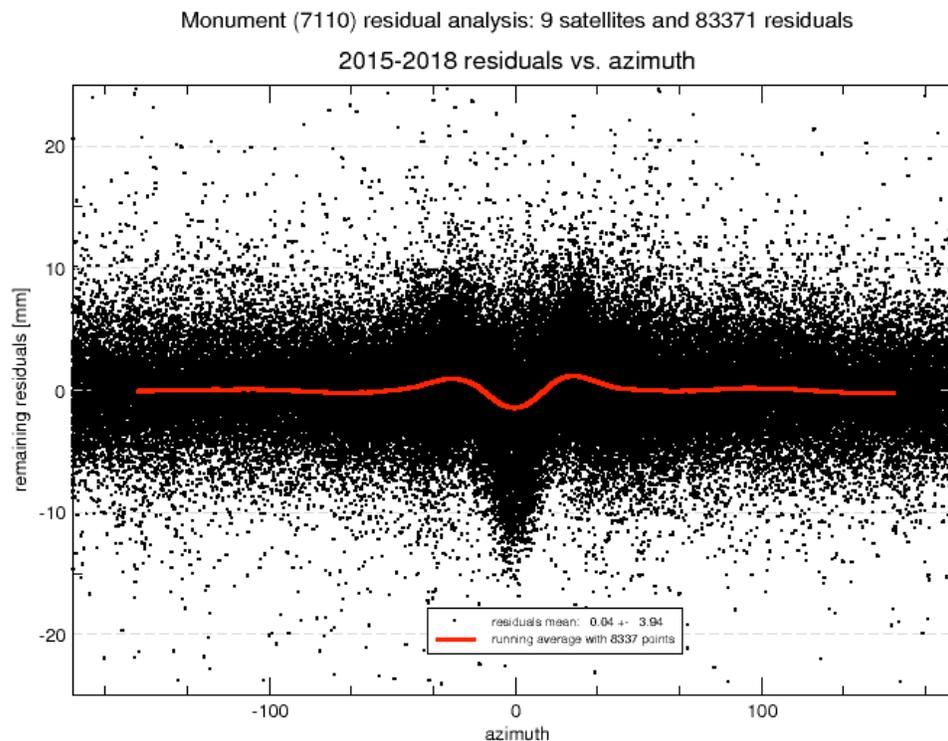


Figure 1.

Discussions have been underway on the difference in performance in ranging to the two LAGEOS satellites; see Figure 2 below. Maybe it's the result of the different inclinations?

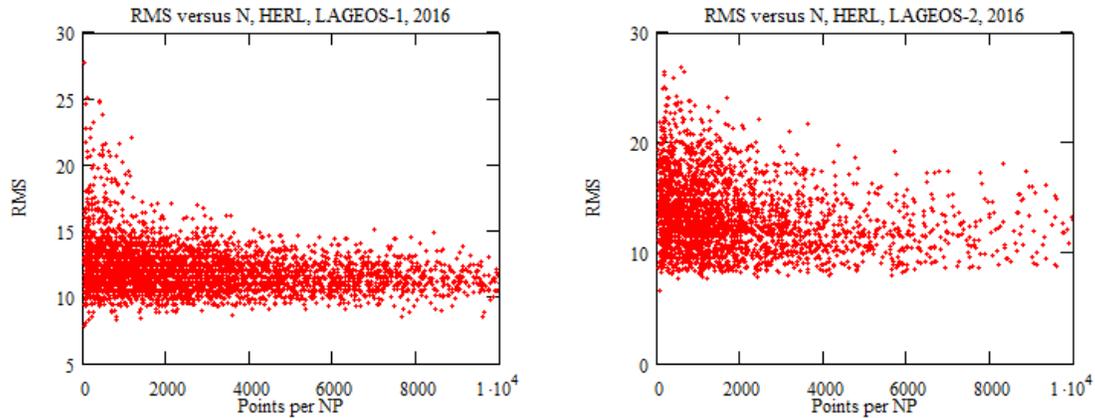


Figure 2.

Station Systematic Error Monitoring Pilot Project-- SSEM PP (Erricos)

ESA has discovered and remedied its problem with the its SSEM PP contribution; it was an improper setting on its refraction correction. All the submitted solutions now look good; the SSEM PP solutions have been uploaded to the JCET Portal. Cinzia is working on the new 2005-2008 combination and it will be posted on the portal once completed. The reanalysis of the data since 1993 is underway by all ACs, the combined results will be the main topic for discussion at the EGU ASC meeting.

Jose is working on the revised CoM corrections for the spherical satellites, but they will not be ready until sometime this coming summer. Current modeling errors in the satellites will be recovered as part of the biases from the solutions; the final reanalysis for the ITRF will have to wait until after the Fall. The new process will then become an operational tool for monitoring station performance and extending the SSEM model.

Web Based Station Performance Tool (Erricos)

The tool is fully operational since last summer (<http://geodesy.jcet.umbc.edu/QC/>). The ITRF 2014 updated data set from the Russians with proper span of ITRF 2014 (going back to June 2016) is not available, but it does run back now for nearly a year, so their values on the web are consistent with those from the other ACs. Erricos is adding capability to the website to display series from multiple ACs at the same time.

Data Issues

Matt mentioned that the Russians had ask for some of his routines for analyzing calibration data. This may be their effort to correct the missing calibration information on their CRD data format.

There had been a lapse in the flow of data from the Russian stations after the new year, but the flow, including the back data, has restarted.

Site Logs (Carey)

Christian is finishing up his software for the editing process and the transfer of current site log information into the new format. Randy will manage the implementation who will work with Carey and Christian to update the related ILRS webpages.

Jose will send a request to Randy to add another item to the updated site log format having to do with the start circuit.

We have agreed to give the stations 90 days (from completion of set up) to update their site logs. We should specify the expected reporting time for site log updates.

Tom Varghese was going to give us an update on status of the site logs for the NASA stations.

Range Dependent Errors

This topic will wait for the new center of mass corrections and will be left to the systems bias activity. No center of mass values have been generated for the Wettzell SOS system.

Full-Rate Data and NP testing

A summary chart on the current status of the FR data submission is shown in Attachment 1. Most of the Russian Stations are still delinquent, along with a few others. We will keep reminding them.

Matt is working on the NP software to make it more easily transferable; he will then do the NP studies with first priority on the spherical geodetic satellites.

ACTION Mike: Check with Graham that the individual recipes for generating NP's at the stations have been included in his satellite center-of-mass corrections.

Low Elevation Data Modeling

Stefan Riepl is examining the impact of different ways of calculating NP's. He and Horst are planning to submit an article for the JoG Special Issue on SLR (JOGSILR).

Satellites Center-of-Mass Parameters on new Satellites

Missions are expected to provide all of the physical information required for the C/M correction models. In some cases, the correction models may be developed from laboratory measurements or from using already standard array (LEO and GNSS). Even though the final correction model will be derived from ranging measurements once in orbit, most cases will require some engineering analysis by the ILRS.

We should establish a target signal group to fulfill this roll, including perhaps Dave A., Toshi, Jose, etc.

Data Population on LAGEOS and Other Satellite Passes

Work continues at CDDIS to provide reports in terms of passes. It was suggested that we define a pass for synchronous satellites as all the data taken by a station over 24 hours, starting at 00:00 hours UT.

The Study Group tasked with recommending new criteria for evaluating (and rewarding) station performance (rather than just number of passes) has sent out a questionnaire soliciting feedback on some suggestions.

The CB should also issue a document of best practices for tracking operations including pass coverage and time separation of calibrations.

Station Tools

The Forum has been quiet. Don't be shy. Matt has started discussion on this within the Networks and Engineering Standing Committee and on the forum on stations tools and practices that might be useful. Toshi has asked that the forum have a section on satellite missions.

Other Topics

In our 1 mm long-term interest, it probably is a good idea to do a rigorous component-by-component examination of the SLR systems, trying to understand all error sources in measurements. We should discuss this with Ivan Prochazka.

Next meeting

Wednesday, March 28 at 13:00 UTC, 09:00 EDT, 14:00 in UK; 15:00 in Central Europe; 22:00 in Japan. Telecon info: Passcode: 317382, international phone numbers:

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<u>Austria, Vienna</u>	<u>+43 (0) 1 25301 0163</u>	<u>Japan (toll free)</u>	<u>0 066 3386 1015</u>
<u>France (national)</u>	<u>0 811 655 211</u>	<u>Japan, Osaka</u>	<u>+81 (0) 6 4560 2100</u>
<u>France (toll free)</u>	<u>0 800 949 765</u>	<u>Japan, Tokyo</u>	<u>+81 (0) 3 4560 1264</u>
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